Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) In a wireless transmitter, a physical layer processor comprising:

a source signal including data;

an FEC (Forward Error Correction) coder to receive the source signal and produce an enhanced source signal including data coded with error correction information;

a demultiplexer coupled to receive the enhanced source signal from the FEC coder;

a plurality of modem processors, each of which is coupled to a unique output of the demultiplexer to process respective portions of the enhanced source signal in independent channels;

a summer coupled to receive outputs of the modem processors to produce an aggregate signal, the aggregate signal being a summation of the enhanced signal processed in independent channels; and

a transmitter to transmit the aggregate signal over a carrier frequency.

2. (previously presented) The wireless transmitter of claim 1, wherein the aggregate signal comprises a spread-spectrum signal.

3. (previously presented) The wireless transmitter of claim 2, wherein the spread-spectrum signal comprises a direct-sequence spread-spectrum signal.

4. (previously presented) The wireless transmitter of claim 1 provided in a base station of a wireless communication system.

5. (previously presented) The wireless transmitter of claim 1 provided in a subscriber station of a wireless communication system.

6. (previously presented) The wireless transmitter of claim 1, wherein the FEC coder operates according to an iterative systematic nested code.

7. (previously presented) The wireless transmitter of claim 1, wherein the FEC coder operates according to a turbo product code.

8. (previously presented) The wireless transmitter of claim 1, wherein the FEC coder according to a convolutional turbo code.

9. (previously presented) The wireless transmitter of claim 1, wherein the plurality of modem processors are configured in a pooling arrangement.

10. (previously presented) The wireless transmitter of claim 1, comprising a second FEC coder, the first and second FEC coders configured in a pooling arrangement.

11. (previously presented) In a wireless receiver, a physical layer processor comprising:

a receiver that receives a wireless signal from a transmitter, the wireless signal being formed at the transmitter by a summation of portions of a coded signal that were processed in independent channels but were wirelessly transmitted as a single aggregate signal;

a plurality of demodulators coupled to receive an output of the receiver; and

a multiplexer coupled to direct an output of the demodulators to an FEC (Forward Error Correction) decoder to recover a single unitary information signal.

12. (previously presented) The wireless receiver of claim 11 provided in a base station of a wireless communication system.

13. (previously presented) The wireless receiver of claim 11 provided in a subscriber station of a wireless communication system.

14. (previously presented) The wireless receiver of claim 11, wherein the FEC decoder operates according to an iterative systematic nested code.

15. (previously presented) The wireless receiver of claim 11, wherein the FEC decoder operates according to a turbo product code.

16. (previously presented) The wireless receiver of claim 11, wherein the FEC coder according to a convolutional turbo code.

17. (previously presented) The wireless receiver of claim 11, wherein the plurality of demodulators are configured in a pooling arrangement.

18. (previously presented) The wireless receiver of claim 11, comprising a second FEC decoder, the first and second FEC decoders configured in a pooling arrangement.

19. (previously presented) In a wireless communication system, at least one of a base station and a subscriber station comprising:

a local transmitter having a physical layer processor comprising:

a source signal including data;

an FEC (Forward Error Correction) coder to receive the source signal and produce an enhanced source signal including data coded with error correction information;

a demultiplexer coupled to receive the enhanced source signal from the FEC coder;

a plurality of modem processors, each of which is coupled to a unique output of the demultiplexer to process respective portions of the enhanced source signal in independent channels;

a summer coupled to receive outputs of the modem processors to produce an aggregate signal, the aggregate signal being an summation of the enhanced signal processed in independent channels; and

a transmitter to transmit the aggregate signal over a carrier frequency; and

a local receiver having a physical layer processor comprising:

a receiver that receives a wireless signal from a remote transmitter, the wireless signal being formed at the remote transmitter by a summation of portions

of a coded signal that were processed in independent channels but were wirelessly transmitted as a single aggregate signal;

a plurality of demodulators coupled to receive an output of the wireless receiver; and

a multiplexer coupled to direct an output of the demodulators to an FEC (Forward Error Correction) decoder to recover a single unitary information signal.

20. (previously presented) The at least one of a base station and a subscriber station of claim 19, wherein the wireless communication system comprises a spread-spectrum communication system.

21. (previously presented) The at least one of a base station and a subscriber station of claim 19, wherein the wireless signal comprises a full-duplex signal.

22. (previously presented) The at least one of a base station and a subscriber station of claim 19, wherein the full-duplex signal comprises a frequency-division duplex (FDD) signal.

23. (previously presented) The at least one of a base station and a subscriber station of claim 19, wherein the wireless signal comprises a non-full duplex signal.

24. (previously presented) The at least one of a base station and a subscriber station of claim 23, wherein the non-full-duplex signal comprises a time-division duplex (TDD) signal.

25. (previously presented) The at least one of a base station and a subscriber station of claim 23, wherein the non-full-duplex signal comprises a half-duplex signal.

26. (previously presented) The at least one of a base station and a subscriber station of claim 23, wherein the non-full-duplex signal comprises a simplex signal.

27. (previously presented) A physical layer signal processor for use in transmitting a wireless signal, the signal processor comprising:

a Forward Error Correction (FEC) encoder, connected to receive a source signal, and to apply an error correction code;

a demultiplexer in communication with the FEC encoder, the demultiplexer outputting two or more demultiplexed encoded signals;

a plurality of modem processors, each receiving a respective one of the plurality of the demultiplexed encoded signals, the modem processors each modulating a respective one of the demultiplexer outputs applied thereto to produce a respective one of a plurality of transmission code modulated signals, the signal processor further characterized by:

a summer that is connected to receive the plurality of transmission code modulated signals to thereby produce an aggregate signal; and

a transmitter connected to receive the aggregate signal output by the adder, for producing an aggregate transmitted signal.

28. (previously presented) The processor of claim 27 provided in a base station of a wireless communication system.

29. (previously presented) The processor of claim 28, wherein the wireless communication system comprises a spread-spectrum communication system.

30. (previously presented) The processor of claim 27 provided in a subscriber station of a wireless communication system.

31. (previously presented) The processor of claim 30, wherein the wireless communication system comprises a spread-spectrum communication system.

32. (previously presented) The processor of claim 27, wherein the FEC encoder operates according to an iterative systematic nested code.

33. (previously presented) The processor of claim 27, wherein the FEC encoder operates according to a turbo product code.

34. (previously presented) The processor of claim 27, wherein the FEC encoder encodes according to a convolutional turbo code.

35. (previously presented) A method for transmitting a high data rate signal over a wireless radio channel comprising the steps of:

enhancing the high data rate signal with the Forward Error Correction (FEC) code;

distributing the enhanced high data rate signal over a plurality of demultiplexed signals;

encoding each of the plurality of demultiplexed signals with a spread-spectrum transmission code;

characterized by the additional steps of:

summing the plurality of spread-spectrum transmission encoded signals to produce an aggregate signal; and

modulating the aggregate signal, to produce a transmitted signal.

36. (previously presented) The method of claim 35 in which the transmitted signal is provided to a base station of a wireless communication system.

37. (previously presented) The method of claim 35 in which the transmitted signal is provided to a subscriber station of a wireless communication system.

38. (previously presented) The method of claim 35, wherein the FEC decoder operates according to an iterative systematic nested code.

39. (previously presented) The method of claim 35, wherein the FEC decoder operates according to a turbo product code.

40. (previously presented) The method of claim 35, wherein the FEC decoder operates according to a convolutional turbo code.

41. (previously presented) A subscriber unit comprising:

a wireless transmitter for conducting wireless communications over a digital data communications path, said wireless transmitter comprising

a data link layer for providing an information signal;

a physical layer comprising:

a forward error correction (FEC) coder for receiving the information signal and producing an enhanced information signal,

a demultiplexer for receiving the enhanced information signal from said FEC coder, and providing respective portions of the information signal at a plurality of outputs,

a plurality of modem processors coupled to the plurality of outputs of said demultiplexer, each modem processor coupled to a unique output for processing a respective portion of the enhanced information signal in an independent channel, and

a summer for receiving outputs from said plurality of modem processors for producing an aggregate signal, the aggregate signal being a summation of the enhanced information signals processed in the independent channels; and

a transmission layer for transmitting the aggregate signal.

42. (previously presented) A subscriber unit according to claim 41 wherein the aggregate signal comprises a code division multiple access (CDMA) signal.

43. (previously presented) A subscriber unit according to claim 41 wherein the aggregate signal comprises a spread-spectrum signal.

44. (previously presented) A subscriber unit according to claim 42 wherein the spread-spectrum signal comprises a direct-sequence spread-spectrum signal.

45. (previously presented) A subscriber unit according to claim 41 wherein the FEC coder operates according to an iterative systematic nested code.

46. (previously presented) A subscriber unit according to claim 41 wherein the FEC coder operates according to a turbo product code.

47. (previously presented) A subscriber unit according to claim 41 wherein said FEC coder operates according to a convolutional turbo code.

48. (previously presented) A subscriber unit according to claim 41 wherein said plurality of modem processors is configured in a pooling arrangement.

49. (previously presented) A subscriber unit according to claim 41 further comprising a second FEC coder, with said first and second FEC coders being configured in a pooling arrangement.

50. (previously presented) A subscriber unit comprising:

a wireless receiver for conducting wireless communications over a digital data communications path, said wireless receiver comprising

a reception layer for receiving an aggregate signal, the aggregate signal being a summation of an enhanced information signal processed in independent channels,

a physical layer comprising

a plurality of demodulators, each demodulator for receiving the aggregate signal and providing a demodulated portion of the aggregate signal,

a multiplexer coupled to said plurality of demodulators for merging the demodulated portions of the aggregate signals into an information signal, and

a forward error correction (FEC) decoder for receiving the information signal and producing a corrected information signal; and

a data link layer for receiving the corrected information signal.

51. (previously presented) A subscriber unit according to claim 50 wherein the aggregate signal comprises a code division multiple access (CDMA) signal.

52. (previously presented) A subscriber unit according to claim 50 wherein said FEC decoder operates according to an iterative systematic nested code.

53. (previously presented) A subscriber unit according to claim 50 wherein said FEC coder operates according to a convolutional turbo code.

54. (previously presented) A subscriber unit according to claim 50 wherein said plurality of demodulators is configured in a pooling arrangement.

55. (previously presented) A subscriber unit according to claim 50 further comprising a second FEC decoder, with said first and second FEC coders being configured in a pooling arrangement.

56. (new) A code division multiple access (CDMA) transmitter for transmitting a high data rate communication, the transmitter comprising:

a transmitter circuit that provides a block of high data rate data;

a turbo encoder that turbo encodes the block;

a demultiplexer that demultiplexes the turbo encoded block into a plurality of data channels;

a plurality of processing circuits that create a respective CDMA channel for each of the plurality of data channels;

a combiner that combines the plurality of CDMA channels; and

a transmitter circuit that transmits the combined plurality of CDMA channels as a wireless signal.

57. (new) The transmitter of claim 56 wherein the transmitter circuit includes an amplifier and an antenna.

58. (new) The transmitter of claim 56 wherein the block of high data rate data is computer application data.

59. (new) A code division multiple access (CDMA) receiver for receiving a high data rate communication, the receiver comprising:

a receiving circuit that receives a wireless signal comprising a plurality of CDMA channels;

a plurality of demodulation circuits, the plurality of demodulation circuits recovering a plurality of data channels from the plurality of CDMA channels;

a multiplexer for multiplexing the plurality of data channels into a single data stream; and

a turbo decoder for turbo decoding the single data stream to provide a block of high data rate data.

60. (new) The receiver of claim 59 wherein the receiver circuit comprises an amplifier and an antenna.

61. (new) The receiver of claim 59 wherein the block of high data rate data is computer application data.

62. (new) A code division multiple access (CDMA) transmitter for transmitting enhanced data, the transmitter comprising:

a transmitter circuit that provides a single stream of enhanced data;

a turbo encoder that turbo encodes the single stream of enhanced data;

a separating circuit that separates the turbo encoded data into a plurality of enhanced data channels;

a processing circuit that produces a respective CDMA channel for each enhanced data channel; and

a transmitter circuit that transmits the plurality of CDMA channels.

63. (new) The CDMA transmitter of claim 62 comprising a combiner that combines the plurality of CDMA channels prior to transmission.

64. (new) The CDMA transmitter of claim 62 wherein the transmitter circuit comprises an amplifier and an antenna.

65. (new) The CDMA transmitter of claim 62 wherein the enhanced data is computer application data.